

## Remarks

Claims 10-27 are currently pending in the application. Claims 1-9 have been canceled as being drawn to a non-elected invention. Claim 10 has been amended to specify that the electroplating process is a sequential process. Specifically claim 10 has been amended to recite a method of electroplating a metal on a plurality of wafers “wherein all of the wafers processed are processed sequentially in the first and second stations.” Support for this amendment may be found throughout the specification, including at page 3, lines 22-26 and page 8, lines 21-25. Dependent claims 26 and 27 have been added. Support for these claims may be found throughout the specification, including at page 11, lines 4-15 and original claim 1. No new matter has been added.

### *Rejections under 35 USC §102*

Claims 10-11, 19, 21 and 24 have been rejected under 35 USC §102(e) as being anticipated by Dordi et al. US Patent No. 6,267,853 (“Dordi”). Applicants submit that the claims as amended are not anticipated by the cited art.

Applicants’ invention, as defined in amended claim 10, is directed to sequential, multi-station processing of wafers. As discussed above, claim 10 has been amended to specify that “all of the wafers processed are processed sequentially in the first and second stations.” Thus, a wafer is processed in, for example, a fill station. The next wafer and all subsequent wafers are processed in the same fill station. This aspect of the invention yields improved wafer-to-wafer uniformity because each wafer is processed in the *same* environment rather than a *similar* environment as in parallel processing systems. With dedicated parallel process stations, there are separate, unique process paths that a wafer can take, thus increasing the variability in the finished product.

Dordi describes such a parallel processing deposition system. The electroplating module contains a plurality of parallel electroplating stations 218, each with parallel processing cells 240. (Fig. 3, col. 5, lines 24-25 and col. 11, lines 43-46). Only some wafers are processed in a first electroplating station 218 while the rest of the wafers are processed in other electroplating stations 218. Thus, Dordi does not disclose or suggest a method wherein “all of the wafers processed are processed sequentially in the first and second stations.”

Thus, claim 10 as amended is patentable over Dordi. Claims 11, 19, 21 and 24 depend from claim 10 and so are patentable for at least the reasons given above.

### *Rejections under 35 USC §103*

Claims 22, 23 and 25 have been rejected under 35 USC §103(a) as being unpatentable over Dordi. Claims 10, 12, 15 and 20 have been rejected under 35 USC §103(a) as being unpatentable over Dordi in view of Rodbell et al. US Patent No. 6,344,129 (“Rodbell”). Claims 13, 14 and 16-18 have been rejected under Dordi in view of Rodbell and further in view of one or more of Uzoh et al. US Patent No. 6,355,153 (“Uzoh”), Tsai et al. US Patent No. 6,224,737 (“Tsai”) and Haydu et al. US Patent No. 6,024,856 (“Haydu”).

Applicants submit that the claims as amended are patentable over the cited art at least because none of the references, either alone or in combination, teach or suggest every element of the claims. Specifically none of the references teach a sequential method for electroplating metals “wherein all of the wafers processed are processed sequentially in the first and second stations.”

As discussed above, the primary reference Dordi does not teach or suggest a sequential process wherein all wafers are processed in the same stations. Moreover, Dordi teaches away from such as system by teaching that multiple wafers should be processed in the seed generation module in parallel to improve wafer throughput (col. 12, lines 28-29).

Rodbell describes a dual-step deposition process for electroplating. There is no teaching nor suggestion in Rodbell of a multiple wafer sequential process. Uzoh relates to a method of depositing conductive material after removing the seed layer. Tsai relates to a method of electroplating copper in a trench by applying a voltage to the trench. Haydu relates to electroplating using insoluble anodes. There is no teaching or suggestion in any of Uzoh, Tsai or Haydu of a multiple wafer process wherein all wafers are processed in the same stations. Thus, none of these references cures the deficiencies of the primary reference Dordi.

Thus, claims 10, 12-18, 20, 22, 23, and 25 are patentable over the cited art for at least these reasons.

Applicants have added claims 26-28, each of which is independently patentable over the cited art. Claim 26 specifies that there is a third subprocess at a third station using a distinct electrolyte. None of the references teach or suggest a process as described in claim 26.

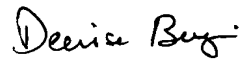
Claim 27 specifies that the subprocesses are selected from wetting, initiation, overburden, reclaim, electroless plating, and activation processes for electroless plating. None of the references teach or suggest processing a wafer in two of these subprocesses in separate baths comprising distinct electrolyte compositions.

Conclusion:

In light of the foregoing amendments and remarks, Applicants respectfully submit that all pending claims are now in condition for allowance. Thus, Applicants respectfully request a Notice of Allowance from the Examiner. Should any unresolved issues remain, the Examiner is encouraged to contact the undersigned at the telephone number provided below. No fees appear to be necessary for this Amendment. However, if the Commissioner determines that any fee is due, such fee may be charged to deposit account No. 50-0388 (Order No. NOVLP067D1).

Respectfully submitted,

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